

WHAT IS CLAIMED IS:

1. A method of correcting an aberration in a maskless lithography system, comprising:
  1. illuminating a spatial light modulator (SLM) array having a plurality of SLMs, wherein said SLM array defines a first plane;
  2. adjusting a position of at least one SLM in said SLM array from the first plane to a second orientation; and
  3. exposing an object with light from the SLM array.
2. The method of claim 1, wherein said first plane is coplanar with at least one other SLM in the SLM array, and said second orientation is not coplanar with the at least one other SLM.
3. The method of claim 2, wherein said second orientation is a second plane.
4. The method of claim 3, wherein said second orientation is parallel to said first plane.
5. The method of claim 3, wherein said second orientation is tilted at an angle with respect to said first plane.
6. The method of claim 2, wherein said second orientation is curved with respect to said first plane.
7. The method of claim 1, wherein the position of said at least one SLM is adjusted to compensate for focal deviation of the light at said object.
8. The method of claim 1, wherein the position of said at least one SLM is adjusted actively.

9. The method of claim 8, wherein the position of said at least one SLM is adjusted using pistons.
10. The method of claim 1, wherein the position of said at least one SLM is adjusted manually.
11. The method of claim 10, wherein the position of said at least one SLM is adjusted using screws.
12. The method of claim 1, wherein said method is performed only during an initial setup of the maskless lithography system.
13. The method of claim 1, wherein said method is performed periodically for maintenance of the maskless lithography system.
14. A method of correcting focal deviation in a maskless lithography system, comprising:
  - illuminating a spatial light modulator (SLM) array having a plurality of SLMs, wherein each SLM in the SLM array has a first position;
  - adjusting at least one SLM from said first position to a second position;
  - transmitting light from the SLM array through an optical system; and
  - exposing an object with the transmitted light,wherein said first position is coplanar with the plurality of SLMs in the SLM array, and said second position is not coplanar with the SLM array.
15. The method of claim 14, wherein said second position is parallel to said first position.
16. The method of claim 14, wherein said adjusting step comprises tilting the at least one SLM.

17. The method of claim 14, wherein said adjusting step comprises bending the at least one SLM.

18. A method of correcting an aberration in a maskless lithography system having a plurality of SLMs in an SLM array, said SLM array having a reflective surface, said method comprising:

adjusting a position of at least one of said plurality of SLMs based on said aberration;

illuminating said SLM array;

transmitting light reflected by said SLM array through an optical system; and

exposing an object with said light,

wherein said adjusting step causes the reflective surface of said SLM array to deviate from a flat plane.

19. The method of claim 18, wherein said adjusting step comprises:

receiving exposure data at a plane of said object;

determining corrective adjustment needed for said at least one of said plurality of SLMs, wherein said adjustment is based on said exposure data; and

adjusting said at least one of said plurality of SLMs as needed to reduce said aberration.

20. A maskless lithography system, comprising along a light path:

an illumination source configured to produce light;

a spatial light modulator (SLM) array having a plurality of SLMs, each SLM in the plurality of SLMs being attached to a respective adjuster;

an optics system configured to condition the light; and

an image plane configured to receive the light,

wherein each adjuster moves a respective SLM as needed to correct for an optical aberration in the light received by the object, such that a surface of the SLM array deviates from a flat plane.

21. The system of claim 20, wherein said aberration is total focus deviation.

22. The system of claim 20, wherein said adjuster is a set of adjusters.

23. The system of claim 22, wherein said set of adjusters tilts its respective SLM.

24. The system of claim 22, wherein said set of adjusters bends its respective SLM.

25. The system of claim 22, wherein said set of adjusters changes an elevation of its respective SLM.

26. The system of claim 22, further comprising:

a controller configured to control said adjusters.

27. The system of claim 26, wherein said adjusters are pistons.

28. The system of claim 22, wherein said adjusters are screws.